

AMENDMENTS TO THE CLAIMS

1. (Previously presented) A motor/generator power conditioner, comprising:
a rectifier electrically coupled directly to a motor/generator port; and
an inverter electrically coupled to the rectifier and to a load port,
wherein in a startup mode, the rectifier reverses role and functions as an inverter
to provide startup power to the motor/generator port, and
wherein in an operational mode, the combined rectifier and inverter provide
generated power to the load port and generates a neutral output.
2. (Previously presented) The motor/generator power conditioner of claim 1, further
comprising:
a DC power bus capable of bi-directional power flow interposed between and
directly coupled to each of the rectifier to the inverter; and
a bus capacitor positioned in parallel to the DC power bus.
3. (Previously presented) The motor/generator power conditioner of claim 2, further
comprising a startup power source is coupled to the DC power bus.
4. (Original) The motor/generator power conditioner of claim 3, wherein in the
operational mode the startup power source is recharged by at least one of the rectifier
and the inverter.
5. (Original) The motor/generator power conditioner of claim 1, wherein the rectifier
comprises an active rectifier.
6. (Original) The motor/generator power conditioner of claim 5, wherein the rectifier
comprises a three-leg rectifier comprised of:
a plurality of switching devices; and
a plurality of diodes, each of said diodes being electrically coupled in parallel to a
respective corresponding switching device.
7. (Original) The motor/generator power conditioner of claim 1, wherein the inverter
comprises a four-leg inverter comprised of:

a plurality of switching devices; and
a plurality of diodes, each of said diodes being electrically coupled in parallel to a respective corresponding switching device,
wherein one of the four legs is electrically coupled to the neutral output.

8. (Previously presented) The motor/generator power conditioner of claim 1, wherein the combined rectifier and inverter provides generated power and startup power without a separate starter circuit.

9. (Original) The motor/generator power conditioner of claim 1, further comprising a separate starter circuit for producing the startup power.

10. (Original) The motor/generator power conditioner of claim 1, wherein a power factor of the generated power is adjustable.

11. (Original) The motor/generator power conditioner of claim 1, wherein a power factor of the generated power is greater than about 0.95 leading or lagging.

12. (Original) The motor/generator power conditioner of claim 1, wherein a power factor of the generated power is about zero.

13. (Original) The motor/generator power conditioner of claim 1, further comprising a prime mover for the motor/generator.

14. (Original) The motor/generator power conditioner of claim 13, wherein the prime mover for the motor/generator comprises one of a turbine and a diesel motor.

15. (Previously presented) The motor/generator power conditioner of claim 1, wherein the motor/generator power conditioner is a two way conditioner wherein the roles of the rectifier and the inverter are selectively reversible so that the rectifier acts as an inverter and the inverter acts as a rectifier.

16. (Previously presented) A method of controlling a motor/generator, comprising:
supplying startup power to the motor/generator via a rectifier electrically coupled to an inverter in a manner wherein the rectifier functions as an inverter during startup of a motor of the motor/generator;
conditioning generated power from the motor/generator via the rectifier and the inverter; and
generating a neutral output via the combined rectifier and inverter while conditioning generated power.
17. (Original) The method of claim 16,
wherein supplying startup power to the motor/generator comprises supplying sufficient power to the motor/generator absent a separate starter circuit, and
wherein conditioning generated power from the motor/generator comprises conditioning sufficient power from the motor/generator absent a separate starter circuit.
18. (Original) The method of claim 16, further comprising:
adjusting a power factor of the generated power.
19. (Original) The method of claim 16, wherein the power factor of the generated power is greater than about 0.95 leading or lagging.
20. (Previously presented) A motor/generator power conditioner, comprising:
rectifier means for functioning as a rectifier when power is generated by the motor/generator and for temporarily functioning as an inverter during startup and supplying startup power to the motor/generator;
inverter means for converting DC power from the rectifier means when power is generated by the motor/generator; and
means for generating a neutral output associated with the inverter means.
21. (Previously presented) A motor/generator power conditioner, comprising:
a three-leg active rectifier electrically coupled directly to a motor/generator port;
a four-leg inverter electrically coupled to a load port;
a bi-directional DC power bus electrically coupling the rectifier to the inverter;
and

a neutral output coupled to one of the legs of the inverter and such as to configure the motor/generator power conditioner so that the three-leg active rectifier can function as an inverter during a startup mode wherein the generator is operated as a motor to accelerate the motor of the motor/generator up to an operational speed.

22. (Previously presented) The motor/generator power conditioner of claim 21, wherein in an operational mode wherein power is being generated by the motor/generator, the combined rectifier and inverter provide generated power to the load port and a neutral for the neutral output.

23. (Previously presented) The motor/generator power conditioner of claim 22, wherein a power factor of the generated power is adjustable.

24 (Previously presented) The motor/generator power conditioner of claim 22, wherein a power factor of the generated power is greater than about 0.95 leading or lagging.

25. (New) A motor/generator power conditioner of claim 1, wherein the load port has first and second outputs in addition to the neutral output.

26. (New) A motor/generator power conditioner of claim 1, wherein the inverter comprises four legs, wherein a first leg is connected to ground, a second leg is connected to a first output of the load port, a third leg is connected to the neutral output of the load port and a fourth leg is connected to a second outlet of the load port.

27. (New) A motor/generator power conditioner of claim 1, wherein each of the four legs comprise a plurality of switching devices and a plurality of diodes.